

REMARKS

Claims 1-29 and 33-61 are pending in this application, of which claims 1, 19, 33 and 51 are independent. Claims 1, 2, 19, 33, 34 and 51 have been amended herein. No new matter has been added. Applicants submit that all of the pending claims are in condition for allowance. Applicants respectfully request reconsideration of the outstanding rejections and allowance of all pending claims in view of the remarks included herein.

I. Interview with the Examiner

Applicants thank the Examiner for the courtesy of conducting an interview on November 23, 2009. During the interview, Applicants' representatives argued that the cited references do not disclose or suggest all the features of the pending claims. Specifically, Applicants' representatives argued that the Hayles reference generally discusses specifying timing and triggering parameters for *hardware* components. In contrast, the present application concerns components of a graphical model provided in a graphical modeling environment. Applicants' representatives indicated that Hayles does not disclose or suggest a graphical post component for posting an event. In response, the Examiner pointed to Figure 10B of Hayles. As explained during the interview, Figure 10B of Hayles illustrates the *timing and triggering components of a hardware device*, such as a measurement device. Hayles is silent about a *graphical post component that posts an event and executing the executable time-based component in response to notifying as opposed to in response to a specific point in time*. The Examiner suggested amending claims to better define the subject matter recited in the pending claims.

II. Claim Rejections under 35 U.S.C. § 103(a)

Claims 1-29 and 33-61 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 7,134,109 by Hayles (hereafter "Hayles") in view of U.S. Patent No. 5,522,073 to Courant et al. (hereafter "Courant") (Office Action, page 2).

A. Claims 1-18 and 33-50

Claim 1 recites:

1. A method for controlling model execution in a graphical modeling environment, said method comprising:

displaying a view of an executable graphical model with a plurality of executable time-based components, said executable graphical model including at least one user-configurable, executable graphical post component having at least one input port for receiving at least one input signal, **said executable graphical post component being configured to post an event when a condition associated with said at least one input signal of said executable graphical post component is satisfied;**

logically associating at least one executable time-based component with said event;

identifying when said condition is satisfied during execution of said executable graphical model;

posting, using said executable graphical post component, said event by informing an event handler of an occurrence of said event in said graphical modeling environment;

notifying said at least one executable time-based component that is logically associated with said event of said occurrence of said event, said occurrence of said event triggering an execution of said at least one executable time-based component; and

executing, within said graphical modeling environment, during a simulation of said executable graphical model, said at least one executable time-based component in response to said notifying as opposed to in response to a specific point in time.

Applicants respectfully submit that Hayles and Courant, alone or in any reasonable combination, do not disclose or suggest the following features of claim 1: **said executable graphical post component being configured to post an event when a condition associated with said at least one input signal of said executable graphical post component is satisfied and executing, within said graphical modeling environment, during a simulation of said executable graphical model, said at least one executable time-based component in response to said notifying as opposed to in response to a specific point in time.**

Applicants provide below an overview of the subject matter of claim 1. Applicants then address each of these claim features separately with respect to the cited references.

1. overview of subject matter of claim 1

Amended claim 1 deals with one or more executable time-based components of an executable graphical model are logically associated with an event. Logical association is a way to specify a causal relationship between the dynamics of a graphical model and the execution of components of the model (Present Application, page 4, lines 1-6). This way, the model component execution during the simulation of the model is tied to the occurrence of “model

events”. As such, the present application ties the execution of executable time-based components to the occurrence of an event (Present Application, page 6, lines 3-5). This way, the executable time-based components execute in response to the occurrence of an event, i.e. when the event is posted by the graphical post component, as opposed to executing in response to a time trigger.

2. said executable graphical post component being configured to post an event when a condition associated with said at least one input signal of said executable graphical post component is satisfied

The Examiner correctly indicates that Hayles does not teach the *executable graphical post component being configured to post an event when a condition associated with said at least one input signal of said executable graphical post component is satisfied*, as recited in Applicants’ amended claim 1 (Office Action, page 3). The Examiner then relies on Courant for disclosing the above claim feature missing from Hayles. Applicants respectfully disagree with the Examiner’s interpretation of Courant.

Courant fails to cure the shortcomings of Hayles with respect to the above feature of claim 1. Courant generally discusses software tools that perform predefined tasks and communicate with each other through events passed (Abstract). Courant merely indicates that a user generates routines by specifying a “when” event and one or more “then” events from a user interface (Col. 2, lines 34-49). In Courant, the user generates the routines using a routine editor illustrated in, for example, Figure 8A. However, the routine editor of Courant is not a graphical post component that has *at least one input signal*. In fact, the routine editor of Courant is merely a user interface allowing user to select items from a drop down menu. The routine editor of Courant is not a part of an executable graphical model with a plurality of executable time-based components. In contrast, Applicants’ claim 1 recites an executable graphical model including a graphical post component that is *configured to post an event when a condition associated with said at least one input signal of said executable graphical post component is satisfied*. Courant is silent about this feature.

Moreover, contrary to the Examiner’s allegation, Applicants respectfully submit that Courant does not disclose or suggest an executable graphical post component.

Hayles generally discusses graphically specifying hardware timing and triggering (Abstract). Measurement devices, such as an E Series board from National Instruments, often employ digital trigger circuitry to aid in conducting data capture or data generation. There are various types of triggers such as starting, pausing, and resuming the capture or generation of data (Col. 2, lines 18-24). A diagram is displayed graphically representing user-configurable timing and triggering components of a device. The diagram receives user input specifying one or more of the timing and triggering attributes (Abstract).

During the interview, the Examiner asserted that Figure 10B of Hayles illustrates a graphical post component that posts an event. Applicants respectfully disagree. Figure 10B illustrates an approach for configuring analog input timing for a device (a board) using a graphical program (Col. 23, lines 44-46). The Examiner asserted that the components illustrated on Figure 10B may be interpreted as graphical post components. However, none of these elements is configured to post an event. More specifically, none of Hayles' elements illustrated in Figure 10B is an *executable graphical post component being configured to post an event when a condition associated with said at least one input signal of said executable graphical post component is satisfied*, as recited in Applicants' amended claim 1.

As such, Hayles and Courant, alone or in any reasonable combination, does not disclose or suggest an *executable graphical post component being configured to post an event when a condition associated with said at least one input signal of said executable graphical post component is satisfied*, as recited in Applicants' claim 1.

3. executing, within said graphical modeling environment, during a simulation of said executable graphical model, said at least one executable time-based component in response to said notifying as opposed to in response to a specific point in time

Applicants respectfully submit that the cited references are silent about *executing, within said graphical modeling environment, during a simulation of said executable graphical model, said at least one executable time-based component in response to said notifying as opposed to in response to a specific point in time*. The Examiner asserts that Hayles teaches executing the at least one executable time-based component (Office Action, page 3). However, in terms of execution, Hayles merely discusses operation of hardware components, i.e. devices, that are

connected to the computer. Applicants amend claim 1 to further clarify that executing of the at least one time-based component is performed *within said graphical modeling environment, during a simulation of said executable graphical model*. The execution of the hardware components of Hayles is not performed *within the graphical modeling environment*.

Furthermore, claim 1 recites that the at least one time-based component executes *in response to said notifying as opposed to in response to a specific point in time*. In contrast, Hayles discusses the user specifying timing and triggering of hardware devices. That is, in Figure 10B of Hayles, the user modifies the timing parameters of the graphical components. As such, the graphical timing components and the hardware devices of Hayles execute in response to a specific point in time, as opposed to executing in response to a notification. Hayles does not disclose or suggest *executing, within said graphical modeling environment, during a simulation of said executable graphical model, said at least one executable time-based component in response to said notifying as opposed to in response to a specific point in time*, as recited in Applicants' claim 1.

Courant does not cure the shortcomings of Hayles with respect to this feature because Courant is silent about *executing, within said graphical modeling environment, during a simulation of said executable graphical model, said at least one executable time-based component in response to said notifying as opposed to in response to a specific point in time*, as recited in Applicants' claim 1.

Accordingly, for at least these reasons, Hayles and Courant, alone or in any reasonable combination, do not disclose or suggest each and every feature of claim 1. Applicants respectfully requests allowance of claim 1. Furthermore, since claims 2-18 are dependent upon claim 1, the cited references also fail to disclose or suggest the features of dependent claims 2-18. Applicants respectfully request the allowance of claims 2-18.

Claim 33 is a medium claim corresponding to claim 1 and Applicants submit that claim 33 is allowable for at least the reasons discussed for claim 1. Claims 34-50 are dependent upon claim 33, and Applicants therefore submit that the cited references also fail to disclose or suggest each and every feature of dependent claims 34-50. Applicants request the allowance of claims 34-50.

2. Claims 19-30 and 51-61

Claim 19 recites:

19. A method for controlling model execution in a graphical modeling environment, said method comprising:
- displaying a view of an executable model with a plurality of executable time-based components, said model including at least one user-configurable, executable graphical post component having at least one input port for receiving at least one input signal, **said graphical post component being configured to post a specified event when a condition associated with said at least one input signal of said executable graphical post component is satisfied;**
 - identifying when said condition is satisfied during said execution of said executable model, said execution of said executable model including running a simulation of said executable model within said graphical modeling environment;**
 - posting, using said executable graphical post component, said specified event by informing an event handler of an occurrence of said specified event in said graphical modeling environment;
 - interrupting execution of an executing event in response to said posting of said specified event; and
 - performing an operation in said executable model within said graphical modeling environment in response to said posting of said specified event.

In light of the arguments presented above with respect to claim 1, Applicants respectfully submit that the cited references, alone or in any reasonable combination, do not disclose or suggest *said graphical post component being configured to post a specified event when a condition associated with said at least one input signal of said executable graphical post component is satisfied*, as recited in Applicants' claim 19.

The cited references further fail to disclose or suggest the following feature of Applicants' claim 19: *identifying when said condition is satisfied during said execution of said executable model, said execution of said executable model including running a simulation of said executable model within said graphical modeling environment.*

Applicants respectfully submit that the cited references are silent about this feature. The Examiner asserts that Hayles teaches an execution of the executable model (Office Action, page 7). However, as indicated above, in terms of execution, Hayles merely discusses operation of hardware components, i.e. devices, that are connected to the computer. Applicants amend claim 19 to further clarify that execution of the executable model includes *a simulation of said*

executable graphical model within said graphical modeling environment. The execution of the hardware components of Hayles is not a simulation that is performed *within the graphical modeling environment.* As such, Hayles does not disclose or suggest *identifying when said condition is satisfied during said execution of said executable model, said execution of said executable model including running a simulation of said executable model within said graphical modeling environment,* as provided in Applicants' claim 19.

Courant does not cure the shortcomings of Hayles with respect to these features because Courant discusses software application tools that communicate with each other. The software application tools of Courant cannot be reasonably combined with the hardware devices of Hayles to arrive at the teaching of *identifying when said condition is satisfied during said execution of said executable model, said execution of said executable model including running a simulation of said executable model within said graphical modeling environment,* as recited in Applicants' claim 19.

Accordingly, for at least these reasons, Hayles and Courant, alone or in any reasonable combination, do not disclose or suggest each and every feature of claim 19. Applicants request the allowance of claim 19. Furthermore, since claims 20-29 are dependent upon claim 19, the cited references also fail to disclose or suggest the features of dependent claims 20-29 and Applicants request the allowance of claims 20-29.

Claim 51 is a medium claim corresponding to claim 19 and Applicants submit that claim 51 is allowable for at least the reasons discussed for claim 19. Claims 52-61 are dependent upon claim 51, and Applicants therefore submit that the cited references also fail to disclose or suggest the features of dependent claims 52-61. Applicants request the allowance of claims 52-61.

CONCLUSION

In view of the above amendment, Applicants believe the pending application is in condition for allowance. Should the Examiner feel that a teleconference would expedite the prosecution of this application, the Examiner is urged to contact the Applicants' attorney at (617) 227-7400.

Please charge any shortage or credit any overpayment of fees to our Deposit Account No. 12-0080, under Order No. MWS-056RCE2. In the event that a petition for an extension of time is required to be submitted herewith, and the requisite petition does not accompany this response, the undersigned hereby petitions under 37 C.F.R. §1.136(a) for an extension of time for as many months as are required to render this submission timely. Any fee due is authorized to be charged to the aforementioned Deposit Account.

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Respectfully submitted,

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